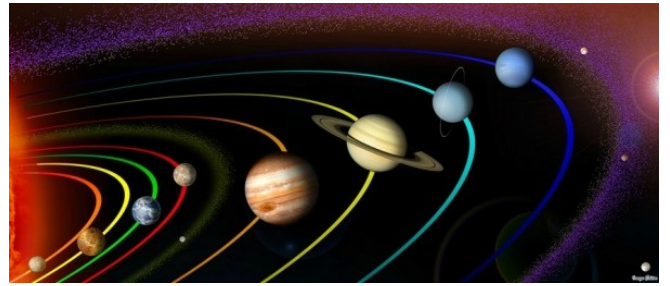
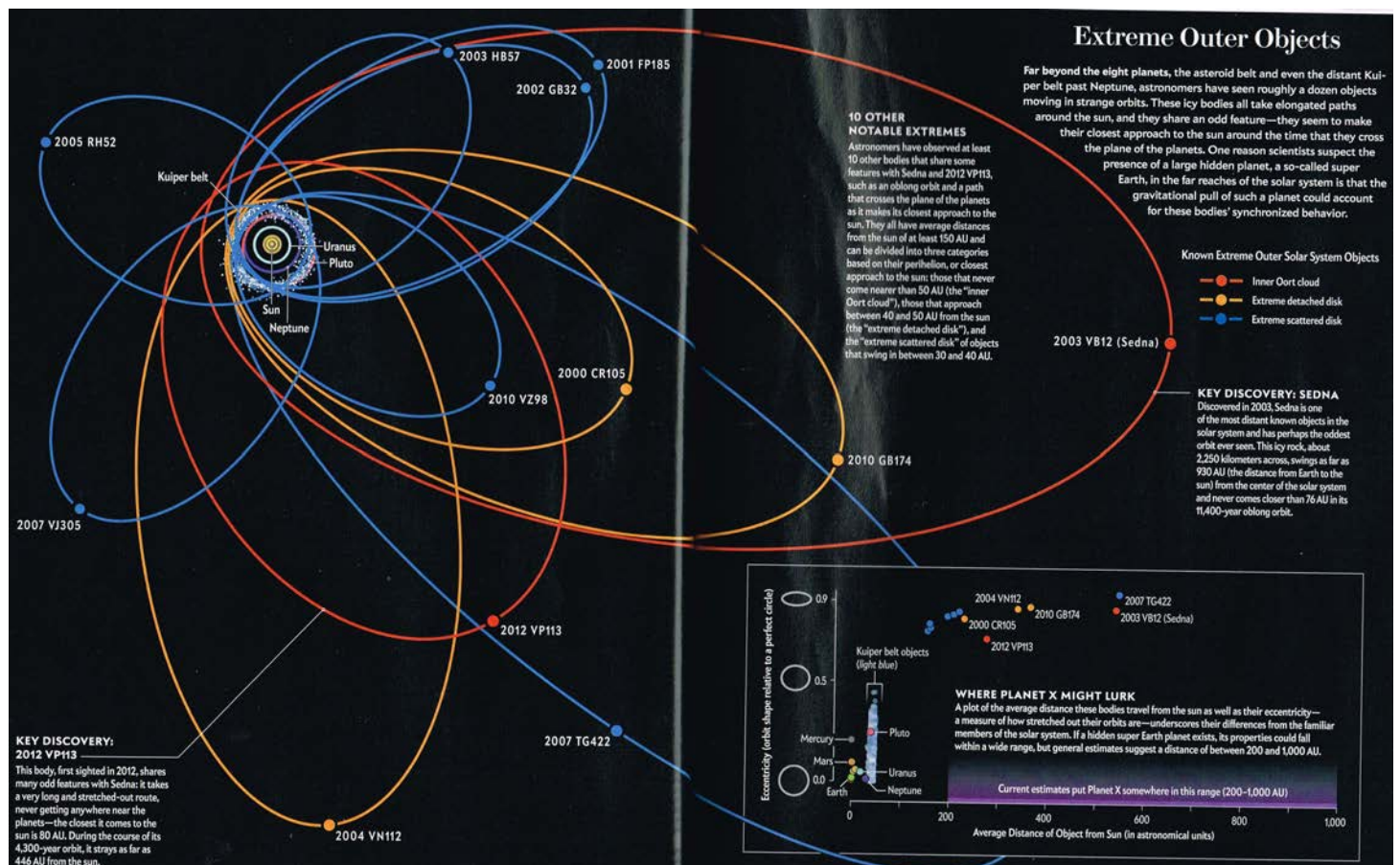


Solid evidence for a 9th planet, say Caltech astronomers

Caltech announced (January 20, 2016) that its astronomers now have solid theoretical evidence for a giant planet – a 9th major planet in the solar system – moving in what they called a “bizarre, highly elongated orbit.” They’ve nicknamed it Planet 9 and hope other astronomers will search for it. If it exists, the planet has a mass about 10 times that of Earth and orbits about 20 times farther from the Sun on average than Neptune, which is currently the 8th major planet and which orbits the sun at an average distance of 4.5 billion km. The astronomers say it would take this new planet between 10,000 and 20,000 years to make just one full orbit around the sun.



Astronomers **Konstantin Batygin** and **Mike Brown** said they discovered the planet’s possible existence through mathematical modelling and computer simulations. They have not yet observed the object directly, but hope their theoretical work will encourage other astronomers to search for it. Mike Brown, who describes himself as the astronomer that gave a nod to Pluto’s demotion from full planet status in 2006 – indicated that he believes the large mass of the undiscovered planet would surely cause the International Astronomical Union to give it full planet status. **The new planet – if it exists – would be some 5,000 times the mass of Pluto, and would only be the third true planet discovered since ancient times, the others are Uranus and Neptune.**



“Scientific American” February 2016 publication feature ‘Search for Planet X’

A number of distant icy objects discovered, circling the Sun with weird orbits have led some scientists to suspect there may be more planets than we know in the solar system. The evidence supports the idea that one or more “Super Earths” may orbit far beyond Neptune. These bodies would be too far and dim to have shown up on any existing telescope, but future observatories may be able to spot them, if you know where to look. Computer modelling of gravitational interactions may narrow the possibilities.

It probably started with **Percival Lowell** in the early 1900, tracing anomalies in the orbits of Uranus and Neptune that eventually led to the discovery of Pluto in 1930 by his young assistant **Clyde Tombaugh**. But these anomalies still have not been fully explained away and there is now a virtual zoo of post Neptunian objects to consider. Batygin and Brown seem to indicate that a planet with 10 times the mass of Earth in a distant eccentric orbit anti-aligned with the other objects is required to maintain this configuration and help explain a number of mysterious features of the field of icy objects and debris beyond Neptune. **AK**